

CLAIMS

What is claimed is:

1. A tie down cleat assembly for engagement with a mating component, the mating component including a channel, comprising:
 - a pin extending along a generally longitudinal axis and having a first end and a second end;
 - a lock plate adjacent said second end;
 - a housing, said housing having an aperture, said pin extending through said aperture with said pin, said lock plate and said housing configured such that rotation of one of said pin and said lock plate about said longitudinal axis results in a corresponding rotation of the other of said pin and said lock plate; and
 - an actuating member operationally connected to said pin and causing selective movement of said pin and said lock plate between a secured and an unsecured orientation to secure the mating component between said housing and said lock plate, said lock plate being received in the channel in said secured orientation.
2. A tie down cleat assembly as recited in claim 1, wherein said pin, said lock plate and said housing are configured such that rotation of one of said pin, said lock plate and said housing about said longitudinal axis results in a corresponding rotation of the other two of said pin, said lock plate, and said housing.
3. A tie down cleat assembly as recited in claim 1, wherein said lock plate includes two dimensions, a first dimension greater than said second dimension, said second dimension adapted to permit said lock plate to be received within the channel of said mating member and said first dimension adapted to trap said lock plate within the channel.

4. A tie down cleat assembly as recited in claim 3, wherein a portion of said mating member is clamped between said lock plate and said housing using said pin and said actuating member when said lock plate is trapped within the channel of the mating member by way of the second dimension of said lock plate.
5. A tie down cleat assembly as recited in claim 4, wherein said lock plate is generally rectangular in shape.
6. A tie down cleat assembly as recited in claim 4, wherein said lock plate may be freely rotated 360° within the channel of the mating member.
7. A tie down cleat assembly as recited in claim 4, wherein said actuating member threadingly engages said pin, a rotation of said actuating member resulting in longitudinal movement of said pin with respect to said housing and said actuating member.
8. A tie down cleat assembly as recited in claim 1, wherein a portion of said pin and a portion of said aperture of said housing include a non-circular cross-section to minimize rotation of said pin with respect to said aperture.
9. A tie down cleat assembly as recited in claim 1, wherein said housing includes at least one base plate member and at least one tie down member.
10. A tie down cleat assembly as recited in claim 9, wherein said tie down member includes a feature for attaching an external component.
11. A tie down cleat assembly as recited in claim 9, wherein said base plate member selectively engages the mating member.
12. A tie down cleat assembly as recited in claim 9, wherein said base plate member includes a lowermost surface, at least one protrusion extending away from said lowermost surface and adapted to be received in the channel of the mating

member, said protrusion minimizing rotation of said assembly within the rail when in said secured orientation.

13. A tie down cleat assembly as recited in claim 1, wherein said housing is a one-piece member.

14. A tie down cleat assembly as recited in claim 1, wherein said pin includes a notch extending inwardly from an outer periphery of said pin; a retainer received in said notch and extending outwardly from said periphery, said retainer selectively engaging a surface of said aperture to limit longitudinal movement of said pin within said housing.

15. A tie down cleat assembly as recited in claim 1, wherein said housing includes an upper surface and at least one groove adjacent to said aperture of said housing; a thrust washer engaging said upper surface, wherein said thrust washer includes an ear, said ear engaging said groove to minimize rotation of said thrust washer with respect to said housing.

16. A tie down cleat assembly as recited in claim 1, wherein said actuating member is one of a lever, a nut, a ratcheting cap, and a wheel.

17. A tie down cleat assembly as recited in claim 1, wherein the tie down cleat assembly includes a biasing member disposed between said housing and said actuating member and biasing said actuating member away from a surface of said housing.

18. A securement mechanism comprising:

a locking member, said locking member including a channel defined by opposing side walls and a bottom surface disposed between said side rails, a leg extending inwardly from a free end of each of said side rails;

a tie down cleat including

a pin extending along a generally longitudinal axis,

a lock plate adjacent said second end, said lock plate having a first dimension and a second dimension, said first dimension greater than said second dimension, said second dimension less than the distance between ends of said legs of said locking member and said first dimension greater than the distance between said ends of said legs,

a housing, said housing having an aperture, said pin extending through said aperture, with said pin, said lock plate and said housing configured such that rotation of said one of said pin, said lock plate and said housing results in a corresponding rotation of the other two of said pin, said lock plate and said housing, and

an actuating member operationally connected to said pin and causing selective movement of said pin and said lock plate between a secured and an unsecured orientation to clamp said legs of said locking member between said housing and said lock plate when a portion of said lock plate including said first dimension is within said channel of said locking member and under said legs.

19. A securement mechanism as recited in claim 18, wherein said locking member is integrated into a vehicle component.

20. A securement mechanism as recited in claim 18 wherein said actuating member threadingly engages said pin, a rotation of said actuating member resulting in longitudinal movement of said pin with respect to said housing and said actuating member.

21. A securement mechanism as recited in claim 18, wherein a portion of at least one of said pin and said aperture of said housing includes a non-circular cross-section to minimize rotation of said pin with respect to said aperture.

22. A securement mechanism as recited in claim 18, wherein said legs of said locking member are uninterrupted along a longitudinal extent of said locking member.